Power

Alpha XP-EDH3 Transponder

Field Installation Instructions

Effective: February 2009

Alpha Technologies

Overview to the field installation instructions

The XP-EDH3 transponder provides the ability to manage network power through an existing cable modem infrastructure, for a variety of power supplies as shown in this document.

These instructions provide information important to the successful installation, connection and operational verification of the Alpha XP-EDH3 transponder in a variety of systems.

Save these instructons for future reference.

CAUTION!

Use a surge protector in the cabinet when the transformer is used to measure line voltage.
Do not place the transponder on top of the power supply or batteries.
Make ***all*** battery harness connections ***and*** connect the interface cable to the power supply ***before*** connecting the cables to the transponder.

Before field installation, the transponder's MAC address should be loaded into the CMTS, and DOCSIS configuration file options should be set.

Alpha XM, XM2 and AM Models

See Subsequent Sections for power supply-specific setup instructions

Power Supply Communications Card Settings

NOTE:

Alpha AM power supplies with RPM interface cards marked 700-019-28, 700-019-31 and 700-019-40 are compatible with the DOCSIS HMS Analog Transponder.

XM - USM
P1 = 2 & 3
P2, P4, P5, P6 = Closed
P3 = Open
P7 = 5V
P8, P9, P13 = 1 & 2
P14 = N/A
SW4 = 0

XM2 - USM2
SW1-1, 2, 6, 8 = On
SW2-1, 3, 4 = On
JP1 = C & 1
JP2 = 1 & 2

XM2 - USM2.5
SW1-1, 2, 6 = On

NOTE:

Output Current switch settings are determined by the output current capability of the power supply and should be setup accordingly. See your power supply user manual for setting details.

- USM: N/A
- USM2: SW1-3 = Output #1, SW1-4 = Output #2
- USM2.5: SW1-3 = Output Current Scaling, 15A or 22A
- RPM: No switch setting required

Connection Instructions for the Alpha AM, XM Series Power Supply

NOTE:

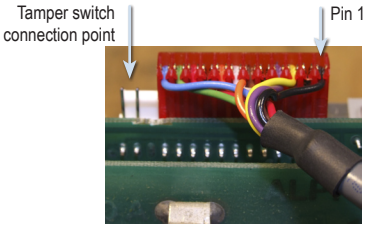
A chipset upgrade may be required; contact Alpha for more information.
Set the jumpers and calibrate the USM card before making connections and applying the load.

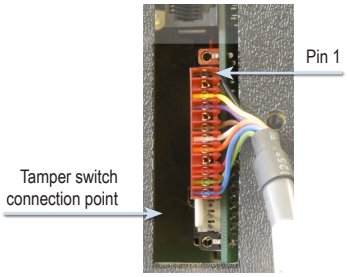
1. Switch Battery Breaker OFF prior to removing the Inverter Module for USM Card installation and configuration.

WARNING!

When installing Battery Sense Cable Kit (BSC) or AlphaGuard sense cable, **do not** connect the black (negative) wire of the BSC to the negative post on Battery 1.

2. It is advisable to install the Battery or Aux pwr cables (providing power to the External DOCSIS unit) and waiting until the RDY LED is flashing normally before installing the power supply interface kit. This will reduce the chances of the power supply transferring to inverter due to a low signal reference on the test control pin.





AM SERIES POWER SUPPLY CONNECTION

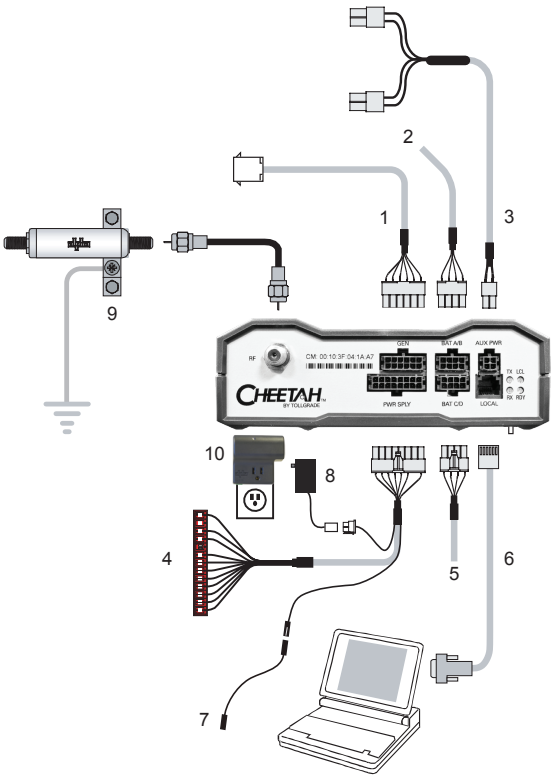
When connecting to an AM Series power supply, plug the 13-pin connector so the black wire is in pin1 and two open pins are left at the left for tamper switch connection *(as viewed from the front of the unit)*..

XM SERIES POWER SUPPLY CONNECTION

When connecting to an XM Series power supply, plug the 13-pin connector so the black wire is in pin1 and two open pins are left at the bottom for tamper switch connection *(as viewed from the front of the unit)*.

Legend

1	Generator Interface (as needed)	Alpha p/n 874-975-20
2, 5	Battery Sense Wire Kit for:	36V single string, 6', Alpha p/n 874-842-21
		36V single string, 9', Alpha p/n 874-842-27
		36V dual string, 6', Alpha p/n 874-842-20
		36V dual string, 9', Alpha p/n 874-842-28
		48V single string, 6', Alpha p/n 875-841-21
		48V single string, 9' Alpha p/n 875-841-25
		48V dual string, 6', Alpha p/n 875-841-20
		48V dual string, 9', Alpha p/n 875-841-24
3	Ignition Battery/Aux Power Cable	Alpha p/n 874-976-20
4	XM Series 2 Power Supply Interface Cable	Alpha p/n 875-335-20 (USM2/2.5)
	XM Series Power Supply Interface Cable	Alpha p/n: 875-335-21 (USM)
	AM Series Power Supply Interface Cable	Alpha p/n: 875-335-21 (RPM)
6	Craft Port Cable *(optional)*	Alpha p/n 875-349-10
7	RTS Cable *(optional)*	Alpha p/n 745-178-21
8	Vin Sense *(optional)*	Alpha p/n 875-493-21
9	Surge Protector Ground Block	Alpha p/n 162-028-10
10	Plug-in Lightning Arrestor w/pass thru (130V) L-G, L-N, N-G	Alpha p/n 162-046-10



Connections between transponder, power supply and laptop

Connection Instructions for the Alpha XM Series 2 Power Supply

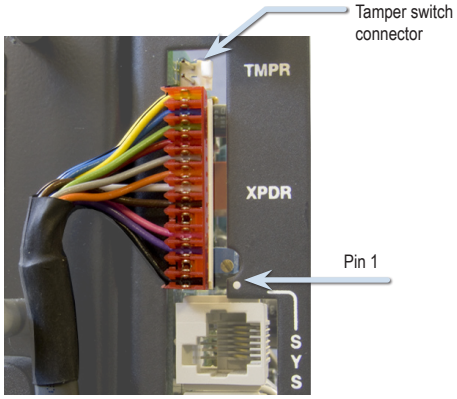
WARNING!

The XM2 batteries are isolated from chassis ground by design. Any voltage potential difference between battery (-) and chassis ground must be eliminated before installing the transponder to avoid potential transponder damage. To accomplish this, attach a ground jumper between battery (-) and chassis ground before installing the transponder. Once the transponder is installed the jumper may be removed if desired.

Switch Battery Breaker OFF prior to removing the Inverter Module for USM2/USM2.5 Card installation and configuration.

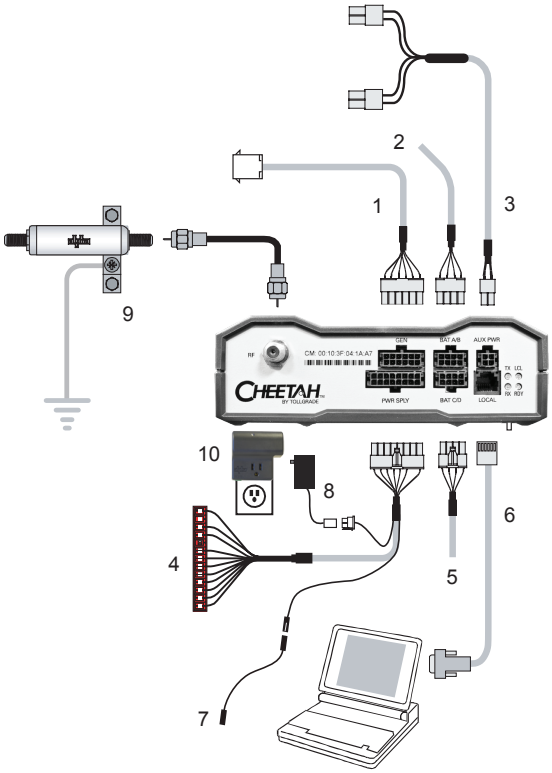
XM SERIES 2 POWER SUPPLY CONNECTION NOTE:

When connecting to an XM Series 2 power supply, plug the 13-pin connector so the black wire is in pin1 and two open pins are left at the top for tamper switch connection.



Legend

1	Generator Interface (as needed)	Alpha p/n 874-975-20
2, 5	Battery Sense Wire Kit for:	36V single string, 6', Alpha p/n 874-842-21
		36V single string, 9', Alpha p/n 874-842-27
		36V dual string, 6', Alpha p/n 874-842-20
		36V dual string, 9', Alpha p/n 874-842-28
		48V single string, 6', Alpha p/n 875-841-21
		48V single string, 9' Alpha p/n 875-841-25
		48V dual string, 6', Alpha p/n 875-841-20
		48V dual string, 9', Alpha p/n 875-841-24
3	Ignition Battery/Aux Power Cable	Alpha p/n 874-976-20
4	XM Series 2 Power Supply Interface Cable	Alpha p/n 875-335-20 (USM2/2.5)
	XM Series Power Supply Interface Cable	Alpha p/n: 875-335-21 (USM)
	AM Series Power Supply Interface Cable	Alpha p/n: 875-335-21 (RPM)
6	Craft Port Cable *(optional)*	Alpha p/n 875-349-10
7	RTS Cable *(optional)*	Alpha p/n 745-178-21
8	Vin Sense *(optional)*	Alpha p/n 875-493-21
9	Surge Protector Ground Block	Alpha p/n 162-028-10
10	Plug-in Lightning Arrestor w/pass thru (130V) L-G, L-N, N-G	Alpha p/n 162-046-10

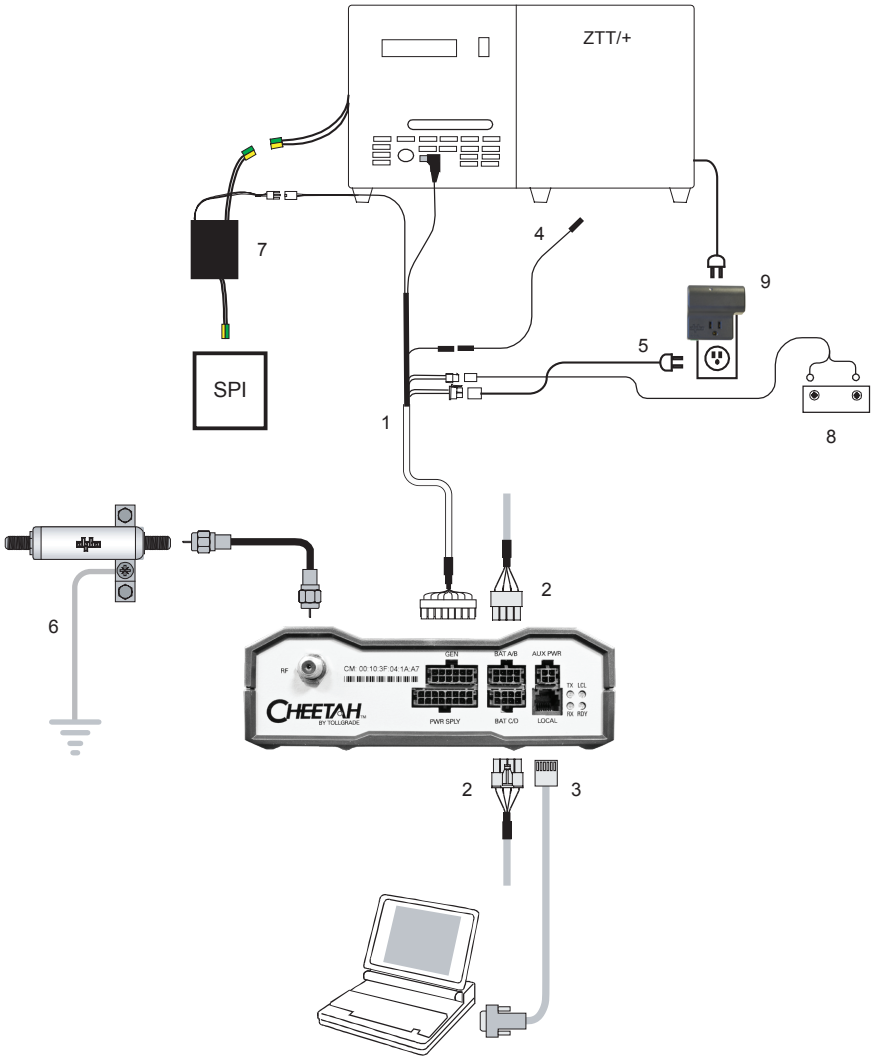


Connections between transponder, power supply and laptop

Input and Output Connections, ZTT and ZTT+ Models

CAUTION!

Installation of the *Vout* and *Iout* sense harness requires powering down the power supply. Use an alternate source of power during this procedure.



Connections between transponder, power supply and laptop

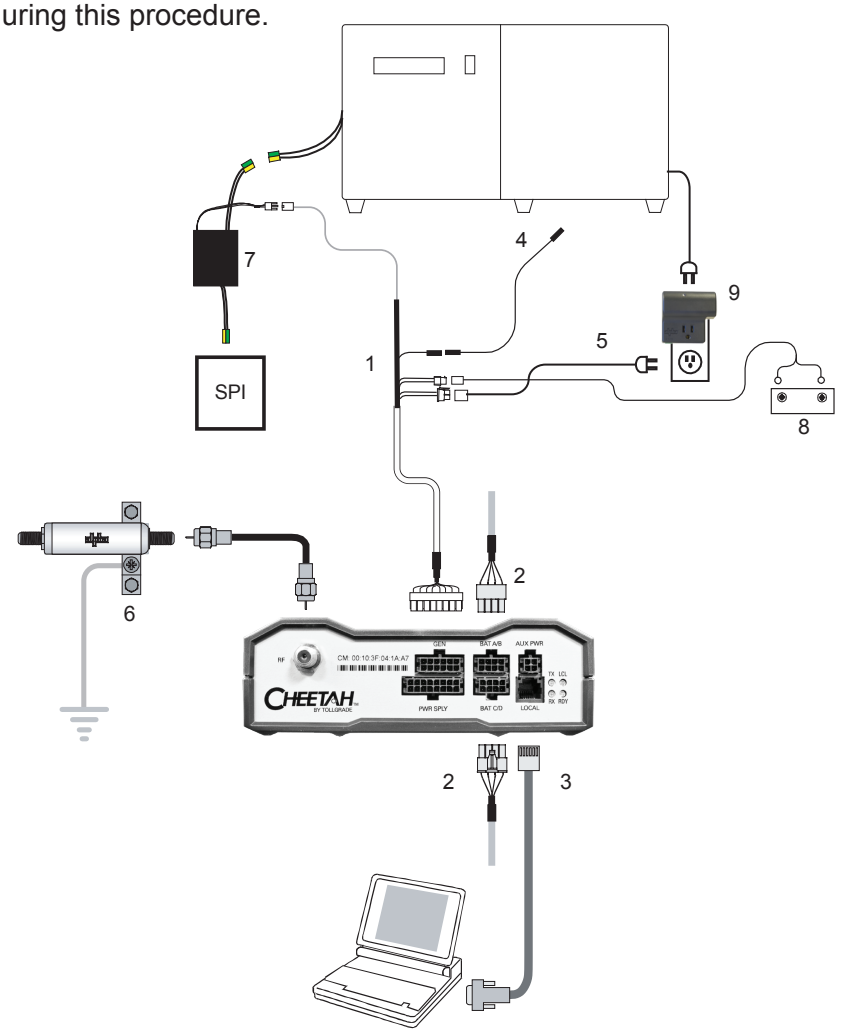
Legend

1	Power Supply Interface	Alpha P/N: 875-335-22 (ZTT and ZTT+ Post 1998) Alpha P/N: 875-335-23 (ZTT+ Pre 1998)
2	Battery Sense Wire Kit for:	36V single string, 6', Alpha p/n 874-842-21
		36V single string, 9', Alpha p/n 874-842-27
		36V dual string, 6', Alpha p/n 874-842-20
		36V dual string, 9', Alpha p/n 874-842-28
		48V single string, 6', Alpha p/n 875-841-21
		48V single string, 9' Alpha p/n 875-841-25
		48V dual string, 6', Alpha p/n 875-841-20
		48V dual string, 9', Alpha p/n 875-841-24
3	Craft Port Cable *(optional)*	Alpha p/n 875-349-10
4	RTS Cable *(optional)*	Alpha p/n 745-178-21
5	Vin Sense *(optional)*	Alpha p/n 875-493-21
6	Surge Protector Ground Block	Alpha p/n 162-028-10
7	Vout Iout Sense Harness	Alpha p/n 875-456-10
8	Tamper Wire Kit	Alpha p/n 875-493-21
9	Plug-in Lightning Arrestor w/pass thru (130V) L-G, L-N, N-G	Alpha p/n 162-046-10

Input and Output Connections, Generic Models

CAUTION!

Installation of the Vout and Iout sense harness requires powering down the power supply. Use an alternate source of power during this procedure.



Connections between transponder, power supply and laptop

Legend

1	Power Supply Interface	Alpha P/N: 875-335-25
2	Battery Sense Wire Kit for:	36V single string, 6', Alpha p/n 874-842-21
		36V single string, 9', Alpha p/n 874-842-27
		36V dual string, 6', Alpha p/n 874-842-20
		36V dual string, 9', Alpha p/n 874-842-28
		48V single string, 6', Alpha p/n 875-841-21
		48V single string, 9' Alpha p/n 875-841-25
		48V dual string, 6', Alpha p/n 875-841-20
		48V dual string, 9', Alpha p/n 875-841-24
3	Craft Port Cable *(optional)*	Alpha p/n 875-349-10
4	RTS Cable *(optional)*	Alpha p/n 745-178-21
5	Vin Sense *(optional)*	Alpha p/n 875-493-21
6	Surge Protector Ground Block	Alpha p/n 162-028-10
7	Vout Iout Sense Harness	Alpha p/n 875-456-10
8	Tamper Wire Kit	Alpha p/n 875-493-21
9	Plug-in Lightning Arrestor w/pass thru (130V) L-G, L-N, N-G	Alpha p/n 162-046-10

Verifying Installation and Network Connectivity *(applies to all power supplies)*

Method 1: Status LEDs

After the initial transponder power-up, network communication can be verified by the following behavior:
Rx LED on Solid, occasionally flickering off, indicating CMTS communication
Tx LED off, but will flicker when transmitting data to CMTS

Method 2: Local Port using Craft Port Cable, Alpha P/N: 875-349-10

Connect laptop to 'Local' port and set terminal emulator software settings to:
19200 Baud; 8-N-1; No Flow Control
Type >STATUS for transponder IP Address
Type >PSDATA 1 for power supply measurements

Method 3: Remote via HTTP Web Page

Place IP Address into Internet Web Browser to verify remote HTTP communication

Method 4: Remote via SNMP (Simple Network Management Protocol)

Use SNMP MIB Browser software to query power supply's input voltage. [OID: 1.3.6.1.4.1.5591.1.4.2.1.23.1]
A valid response verifies remote SNMP communication.

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Power

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